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ABSTRACT

Following an analysis of work in the area of relationships between concept development and social development, a preliminary research project carried out to examine these relationships is discussed. Piaget's "The Language and Thought of the Child" served as a springboard for the past and present investigations. In the experiment reported, a group of normal pupils compared with a group of gifted pupils were tested on three Piagetian tasks and a measure of social abilities. Piaget predicts accelerated acquisition of concepts in gifted children. Assuming this prediction to be true, it was hypothesized that: (1) concept level on cognitive tasks and the level of socialization measured by a test of role playing ability is significantly higher for gifted children than for their average peers; (2) egocentrism, as measured by Piaget's task of spatial perspectives, is negatively related to scores on a test of role playing ability; and (3) there is a stronger positive relationship between the cognitive task measuring conservation and role playing ability than between the other tasks and role playing ability. In order to test these hypotheses, 20 subjects were chosen from two third-grade classes. Five boys and five girls, matched for sex and age, were randomly selected from a normal third-grade class for the control group; five girls and five boys from the third level gifted class served as the experimental group. The subjects were interviewed individually on three Piagetian tasks and a test of role-playing ability. Results of the study showed that hypothesis one was supported; hypothesis two was not supported; and hypothesis three was supported. (DB)

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THE CORRESPONDING EFFECT OF EGOCENTRISM ON CONCEPT AND SOCIAL DEVELOPMENT IN YOUNG CHILDREN

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The process of socialization has unfortunately been an area of only incidental concern in Piaget's writings. This is an expected result of Piaget's observations, though, since the main direction of his investigations has led him to search for the determinants of the acquisition of knowledge. However, although not directly involved in studying the social process of development, Piaget does recognize the impact of socialization on the child's cognition. (Piaget 1969). Furthermore, if significant correlations can be discovered between concept development and social development, then we have a new perspective by which to examine Piaget's theories. With this line of thinking, a comparable stage-level theory of social development may also be forthcoming.

A preliminary research project has been carried out to examine these relationships between concept and social development. However, an analysis of some of the work already done in this area will be undertaken in the following paragraphs as a prologue to the report of this hypothesis and results.

Piaget's The Language and Thought of the Child (1926) served as a springboard for these investigations. There are several reasons for such a beginning. First, it must be recalled that we are concerned at this point with the possible correlation that exists between cognitive level and social developmental level. It seems that Piaget has satisfied sufficiently the requirements for a developmental model of cognition to be applied in this investigation. His extensive work in the

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investigation of cognitive processes supports this. Secondly, in The Language and Thought of the Child (1926) Piaget's observations overlap some areas of social development (primarily communication and egocentrism). This will help provide a structure by which any correlative results between concept and social development can be closely checked for construct validity within Piaget's theory.

Piaget (1926) derived three basic findings from his investigations:

1) Egocentric speech, defined as speech without an obvious communicative purpose, was found to comprise over 50% of the speech of the child under seven.

2) Genuine argument and collaboration were not found to intervene in the child's speech repertoire until after the age of seven.

3) Children between the ages of six and eight had great difficulty in tailoring explanations to their listener's needs.

These findings taken alone indicate the extent to which egocentrism pervades the developmental processes of the young child. Other studies by Piaget, notably The Moral Judgement of the Child (1965) and The Child's Conception of Space (1948), demonstrate that egocentrism orients the child's thinking to meet his needs. Hence, the child's failure to differentiate in the early preoperational stage between speaker's and listener's needs makes it possible for him to exercise the use of language for his own needs.

Eventually, as Piaget (1926) puts it, "intelligence, just because it undergoes a gradual process of socialization, is enabled through the bond established by language between thoughts and words to make an increasing use of concepts (p. 45)."

Studies in the literature tend to support the general direction of these findings.

Weinberg (1963) predicted that performance on a task measuring egocentrism could correlate with behavior on tasks which measure more obviously cognitive factors.

His study, utilizing a group of 6- and 7-year-old children, demonstrated a relationship between relativistic thinking and egocentrism manifested on categorizing tasks. In another study, Neale (1966) derived results indicating that emotionally disturbed children display greater egocentrism than their "normal" peers. These results indicate that more work may be fruitful with different groups of children on varying tasks of egocentrism.

In addition, Bobroff (1960) succeeded in describing the developmental sequence of stages encountered in the socialization process. Levels of social development in Bobroff's data were narrowly defined by the criteria of knowledge and practice of rules in games. The results of this study pose the question of seeking the determinants of social behavior, which develops in stages.

Piaget's results supported by these findings, pose a logical proposition. If the use of language for communication and cognitive performance coincide and language as communication increases along with level of cognitive performance while egocentrism decreases then a process may be operating to account for this pattern.

A study has been designed to investigate this proposition and by logical inference lend support to the conclusion that a process is operating which can account for this pattern. Expectedly, this process may resemble learning transfer. If so, developed social and cognitive concepts must have similar attributes for transfer to occur.

A group of normal pupils compared with a group of gifted pupils were tested on three Piagetian tasks and a measure of social abilities. Piaget predicts accelerated acquisition of concepts in gifted children (Phillips, 1959). Assuming this prediction to be true it was hypothesized:

1) Concept level on cognitive tasks and the level of socialization measured by a test of role playing ability is significantly higher for gifted children than for their average peers.

2) Egocentrism, as measured by Piaget's task of spatial perspectives, is negatively related to scores on a test of role playing ability.

3) There is a stronger positive relationship between the cognitive task measuring conservation and role playing ability than between the other tasks and role playing ability.

Method

In order to test these hypotheses 20 subjects were chosen from two third-grade classes at Main Street School, Wyoming Valley West School District, Kingston, Pennsylvania.

Initially, 5 boys and 5 girls were randomly selected from a normal third-grade class for the control group. These were matched for sex and age with 5 boys and 5 girls from the 3rd level gifted class. Age, matched to the closest month, was equal in five cases, one month apart in four cases, and two months different in one case.

The subjects were interviewed individually. An interview consisted of the administration of three Piagetian tasks and a test of role playing ability. Performance on the Piagetian tasks was recorded on score sheets and the role playing test responses were taped.

The three Piagetian tasks were chosen for both their diversity and ability to provide an overall assessment of cognitive level.

The first was Piaget's task of spatial perspectives (Piaget & Inhelder, 1948).

Generally this task measures the child's ability to assume varying points of view around a mache model of three mountains without changing position. Piaget also interprets performance on this task to indicate level of egocentrism or lack of it. Instructions for the construction and administration of this task which appear in The Child's Conception of Space (Piaget, 1948) were followed.

The second task was found in the same volume (Piaget, 1948, p. 271-297). The child was presented with five geometric figures and asked to draw them as they would look if opened flat on the table. The level of performance obtained indicates the child's ability to "rotate and unfold surfaces onto the frontal plane (Piaget, 1948, p. 271)".

The third task was an adaptation of Piaget's attempts to measure the child's conservation of volume (Flavell, 1963, p. 298-341). The child was given four clay balls, each half as large as the next, and was asked to predict what would happen when they were placed individually in a beaker of water. Finally, the shape of the largest ball was changed to a sausage and the child was asked whether it would now change the water level to the same degree he observed earlier. The sausage was once again returned to its ball form and the child again predicted its affect on water level.

The Dramatic Acting Test (DAT) developed by Perry London of U.S.C. and Patricia Bowers of University of Illinois was utilized next to measure role playing ability. Generally the DAT follows the principle that "to gain social perspective a person must be able to put himself realistically in another's place (London, 1965, p. 500)." It is primarily because the DAT measures such a well defined area of social ability that it was chosen for this experiment. Role playing ability, as measured by this test, represents an important part of the socialization process.

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Essentially, the DAT consists of six short playlets. Each subject is given standardized instructions. At the beginning of each sequence the experimenter sets the scene and announces the roles both experimenter and subject must play. These include a friend, enemy, mother, father, teacher and sheriff. The experimenter begins by reading the first few lines and the subject ad-libs. Action continues for about one minute.

Each subject was administered the three Piaget tasks and the Dramatic Acting Test in the order just mentioned.

Results

After all subjects were interviewed, results were tabulated and scored. The DAT is scored by comparing responses to a scale and assigning a score of one through four for each response. Scores are averaged for each play and a total score is obtained by adding the totals from six plays. Thus a range of scores between 6 and 24 may be obtained. Scorer reliability was not checked due to the clarity of the scoring system provided.

The three Piagetian tasks were scored by assigning stage levels of either I, IIa, IIb, IIIa, or IIIb for each task. Generally, scoring of this nature is more difficult since there are no objective scales to follow. All subjects were scored on these tasks by myself and an experienced collaborator according to general protocols established by Piaget. Each scorer assigned levels independently and the results were checked for discrepancies. The few disagreements which appeared were discussed and adjusted accordingly. The only disagreements which did occur were between two successive stages and occurred in both directions, i.e. there were instances in which the author's stage level was highest of the two scorers, and other times in which the collaborator's stage level appeared higher.

The stage level of the control group on all three tasks ranged from 2A - 3A. Fifty percent of these scores were at level 2A. The Dramatic Acting Test scores of this group ranged from 10 - 20.

The stage level of the gifted group on all three tasks ranged from 2A - 3B. Fifty percent of these scores fell at the 2B stage level. Dramatic Acting Test scores ranged from 17 - 22.

The sign test (Siegel, 1956) was applied to stage level and DAT scores between matched subjects. The gifted group scored significantly higher in the expected direction on Tasks II and III and the DAT. These results were significant at the .02 level and beyond. However, differences on Task I were not significant ($p = .055$).

Subjects within each group were classified according to stage level on each of the Piaget tasks and the Jonckheere test for ordered alternative hypotheses (Siegel, 1961) was applied to their DAT scores. The relationship between DAT scores and Task III, conservation of volume, was significant at the .05 level for the control group. None of the other relationships tested was significant, and no significant differences were found between sexes.

Discussion

General support is demonstrated by the above results for Piaget's prediction that "gifted" students will be accelerated in the area of cognitive development over normal students. In addition, the gifted group also scored higher on the role playing test, bearing out the expectation that socialization will increase with concept development. Thus the first hypothesis was supported.

Hypothesis number two, that egocentrism in the task of spatial perspectives would be negatively related to social development, was not supported. This result may be partly due to confusion in administration of one part of that task. Specifically,

the children had difficulty in arranging the cutouts which simulated the various shapes of the paper mache mountains. In replication, cones could be used to represent the mountains in cutout form so that this difficulty may be avoided. Also, in testing city children on this task more reliable results could be achieved by using tall buildings in place of mountains.

Finally, hypothesis three was supported. The relationship found between Task III (conservation of volume) and the DAT in the control group indicates that a process may be operating to account for this finding. It must be noted, though, that because of the small size and unequal groups at the stage levels within each task the probability estimate may be off. However, the need for more research in this area is indicated.

It is hoped that this study will at least pave the ground for further investigation. Having an interest in the exceptional child, the author believes a theory of social development along the lines of Piaget's cognitive theory will be an aid to the special instructional problems encountered with these children.

On the basis of these results, a replication of this study is intended with tasks of conservation of volume, quantity and so on with a larger longitudinal sample. This further work should define even more clearly the correlates of social ability.

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